

District of Columbia Teachers' Retirement Fund and Police Officers and Fire Fighters' Retirement Fund

Financial Statements and Schedules
(with Independent Auditors' Report thereon)

As of and for the Years Ended September 30, 2019 and 2018



**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
TABLE OF CONTENTS
YEARS ENDED SEPTEMBER 30, 2019 AND 2018**

INDEPENDENT AUDITORS' REPORT	1
MANAGEMENT'S DISCUSSION AND ANALYSIS	4
COMBINING FINANCIAL STATEMENTS	
COMBINING STATEMENTS OF FIDUCIARY NET POSITION	11
COMBINING STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION	12
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS	13
REQUIRED SUPPLEMENTARY INFORMATION	
SCHEDULES OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS	35
SCHEDULES OF EMPLOYER CONTRIBUTIONS	37
SCHEDULE OF INVESTMENT RETURNS	39
SUPPLEMENTARY INFORMATION	
SCHEDULES OF ADMINISTRATIVE EXPENSES	40
SCHEDULES OF INVESTMENT EXPENSES	41
SCHEDULES OF PAYMENTS TO CONSULTANTS	42



INDEPENDENT AUDITORS' REPORT

To the Board of Trustees, District of Columbia Retirement Board for
District of Columbia Teachers' Retirement Fund and
District of Columbia Police Officers and Fire Fighters' Retirement Fund

Report on the Funds' Basic Financial Statements

We have audited the accompanying combining financial statements of District of Columbia Teachers' Retirement Fund and District of Columbia Police Officers and Fire Fighters' Retirement Fund (the Funds), Pension Trust Funds of the Government of the District of Columbia (the District), which comprise the Combining Statement of Fiduciary Net Position as of September 30, 2019, and the related Combining Statement of Changes in Fiduciary Net Position for the year then ended, and the related notes to the Funds combining financial statements, which collectively comprise the Funds' basic financial statements.

Management's Responsibility for the Funds' Basic Financial Statements

The Funds' management is responsible for the preparation and fair presentation of the Funds' basic financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the Funds' basic financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the Funds' basic financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Funds' basic financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the basic financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the basic financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Funds' preparation and fair presentation of the basic financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Funds' internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the basic financial statements.



We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the Funds' basic financial statements referred to above present fairly, in all material respects, the financial position of the Funds, as of September 30, 2019, and the respective changes in financial position for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 1, these financial statements are intended to present the financial position and changes in financial position of the Funds, and do not purport to, and do not present fairly the financial position of the District of Columbia, as of September 30, 2019, and the changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Other Matters

Prior Period Financial Statements

The combining financial statements of the Funds as of September 30, 2018, were audited by other auditors whose report dated December 28, 2018, expressed an unmodified opinion on those statements.

Required Supplementary Information

U.S. GAAP require that the management's discussion and analysis, schedule of changes in net pension liability and related ratios, schedule of employer contributions, and schedule of investment returns, as listed in the table of contents, be presented to supplement the Funds' basic financial statements. Such information, although not a part of the Funds' basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the Funds' basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the Funds' basic financial statements, and other knowledge we obtained during our audit of the Funds' basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the Funds' basic financial statements. The supplementary information, such as schedules of administrative expenses, schedules of investment expenses and schedules of payments to consultants, as listed in the table of contents, are presented for purposes



of additional analysis and are not a required part of the Funds' basic financial statements.

The supplementary information, as listed in the table of contents, is the responsibility of the Funds' management and was derived from and relate directly to the underlying accounting and other records used to prepare the Funds' basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the Funds' basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the Funds' basic financial statements or to the Funds' basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedules of administrative expenses, schedules of investment expenses and schedules of payments to consultants are fairly stated, in all material respects, in relation to the Funds' basic financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated January 16, 2020, on our consideration of the Funds' internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Funds' internal control over financial reporting, or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Funds' internal control over financial reporting and compliance.

McConnell & Jones LLP

Washington, D.C.
January 16, 2020

MANAGEMENT'S DISCUSSION AND ANALYSIS

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2019 AND 2018**

INTRODUCTION

This discussion and analysis provide an overview of the financial activities of the District of Columbia Teachers' Retirement Fund (TRF) and Police Officers and Fire Fighters' Retirement Fund (POFRF), for the years ended September 30, 2019, 2018, and 2017, which collectively will be referred to as the "District Retirement Funds" or the "Fund." This discussion and analysis should be read in conjunction with the financial statements, the notes to the financial statements, the required supplementary information and the supplementary information provided in this report.

The District of Columbia Retirement Board (the Board or DCRB) is an independent agency of the District of Columbia (the District or D.C.) Government. The Board is responsible for managing the assets of the District Retirement Funds. As authorized by D.C. Code, the Board pools the assets of the TRF and the POFRF into a single investment portfolio. The Board allocates the investment returns and expenses, and the administrative expenses of the Board, between the two District Retirement Funds in proportion to their respective net position. The Board maintains financial records of contributions, purchases of service, benefit payments, refunds, investment earnings, investment expenses, and administrative expenses.

Effective September 26, 2005, the Board entered into a Memorandum of Understanding (MOU) with the District of Columbia and the United States Department of the Treasury (the U.S. Treasury) to administer the pension benefits under the TRF and the POFRF for all retirees, survivors and beneficiaries that are the financial responsibility of the District of Columbia (service earned on and after July 1, 1997) and the Federal Government (service through June 30, 1997). In addition to the Board's administrative duties, the U.S. Treasury also provides certain administrative services related to the administration of pension benefits under the District of Columbia Teachers' Retirement Plan and the District of Columbia Police Officers and Fire Fighters' Retirement Plan (the Plans). The administrative costs incurred while administering the pension benefits are shared by DCRB and the U.S. Treasury in accordance with an MOU that is agreed to annually between the two parties.

OVERVIEW OF THE FINANCIAL STATEMENTS AND SCHEDULES

The following discussion and analysis are intended to serve as an introduction to DCRB's financial statements. The basic financial statements include:

The Combining Statements of Fiduciary Net Position are a point-in-time snapshot of plan fund balances at fiscal year-end. It reports the assets available to pay future benefits to retirees, and any liabilities that are owed as of the statement date. The resulting Net Position (Assets – Liabilities = Net Position) represents the value of assets restricted for pensions net of liabilities owed as of the financial statement date.

The Combining Statements of Changes in Fiduciary Net Position display the effect of financial transactions that occurred during the fiscal year, where Additions – Deductions = Change in Net Position. This increase (or decrease) in Net Position reflects the change in the value of Net Position Restricted for Pensions.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2019 AND 2018**

The Notes to Financial Statements contain disclosures and discussions which support the data presented in the financial statements. The notes present information about the creation and administration of the Fund, significant accounting policies, and investments. The notes are an integral part of the financial statements and should be considered in conjunction with any review of the financial statements.

The Required Supplementary Information consists of schedules of changes of employer's net pension liability and related ratios, employer contributions, and the money-weighted rate of investment returns.

The Supplementary Information includes additional information on the District Retirement Funds including schedules of administrative expenses, investment expenses, and payments to consultants. These schedules include more detailed information pertaining to the Plans.

ANALYSIS OF FINANCIAL INFORMATION

DCRB's funding objective is to meet long-term benefit obligations with net investment income and employer and member contributions. The discussion below provides an analysis of the current year's financial activities in relation to the current member population and relevant economic conditions for the combined Funds.

Additions to Net Position (Revenues)

Additions to net position are comprised of employer contributions, employee contributions, net investment income, and other income. These additions for fiscal year 2019 totaled \$544.7 million, a decrease of \$109.2 million (16.7%) from the fiscal year 2018 amount of \$653.8 million. This decrease was primarily due to the lower investment returns experienced in fiscal year 2019, as part of overall market volatility.

Employer contributions in fiscal year 2019 totaled \$144.6 million, a decrease of \$20.0 million (12.2%) from the fiscal year 2018 amount of \$164.6 million. The actuarial valuation report showed this decrease resulted primarily from better demographic experience of the member population versus the actuarial assumptions for the demographics. The most recent Experience Study was completed in 2017. The fiscal year 2019 employer contribution was derived from the contribution rate calculated in the actuarial valuation report for the period ended October 1, 2017, multiplied by covered payroll and adjusted for timing differences caused by the contribution being calculated 2 years in arrears. This adjustment is required by the D.C. Code.

Plan member contributions in fiscal year 2019 totaled \$78.7 million, an increase of \$3.9 million (5.2%) over the fiscal year 2018 amount of \$74.8 million. Member contributions consist of amounts paid by members for future retirement benefits and increased primarily because of salary increases.

Investment income, net of investment fees, for fiscal year 2019 totaled \$318.0 million and had a return of 3.8%. Net investment income for fiscal year 2018 totaled \$411.0 million and had a return of 5.4%. Other income in fiscal year 2019 totaled \$3.3 million, which was a decrease of \$0.1 million from the fiscal year 2018 amount of \$3.4 million. Other income consists mainly of reimbursements of administrative expenses from the U.S. Treasury.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2019 AND 2018**

Deductions from Net Position (Expenses)

The statutory mandate of DCRB is to provide retirement, survivor, and disability benefits to eligible members and their survivors. The costs of such programs include recurring benefit payments, elective refunds of contributions to employees who terminate employment, and the cost of administering the District Retirement Plans.

Deductions from net position are comprised of benefit payments, refunds, and administrative expenses. These deductions for fiscal year 2019 totaled \$223.7 million, an increase of \$14.7 million (7.0%) over the fiscal year 2018 amount of \$209.0 million.

Benefit payments for fiscal year 2019 totaled \$202.8 million, an increase of \$17.6 million (9.5%) over the fiscal year 2018 amount of \$185.2 million. This increase reflects the combination of a net growth in the number of retirees and survivors receiving benefits, coupled with COLA adjustments and an overall increase in the final average salary for new retirees. In fiscal years 2019 and 2018, benefit payments made on behalf of current retirees, survivors and beneficiaries comprised approximately 91% and 89% of the funds' expenses, respectively.

Refunds of member contributions in fiscal year 2019 totaled \$8.0 million, an increase of \$0.3 million (3.2%) over the fiscal year 2018 amount of \$7.7 million. Refunds are typically much higher in the Teachers' Fund than in the Police Officer and Fire Fighters' Retirement Fund. These refunds of member contributions are at the discretion of the member and vary from year to year.

Administrative expenses in fiscal year 2019 totaled \$12.9 million, a decrease of \$3.1 million (19.5%) from the fiscal year 2018 amount of \$16.0 million. DCRB also serves as the third-party administrator for benefits earned through June 30, 1997, which are the responsibility of the U.S. Department of the Treasury (U.S. Treasury). U.S. Treasury reimburses DCRB for costs incurred for these third-party administrator services. Any reimbursement of administrative expenses from U.S. Treasury offsets the amount required from the Fund each year. In fiscal years 2019 and 2018, the administrative expenses were equivalent to 15 and 20 basis points of the assets under management, respectively.

Funding Status

As of September 30, 2019 (the date of the most recent actuarial valuation), the funding status was 105.5% for the combined Teachers' and Police Officer and Fire Fighters' Retirement Funds. DCRB is a well-funded yet immature system as a result of the 1999 asset split with the U.S. Treasury, in which the U.S. Treasury assumed responsibility for all benefit obligations prior to July 1, 1997. As with all immature systems, a higher percentage of benefits are funded by current contributions. As the system matures, investment income will provide a greater percentage of the funds necessary to pay retirement benefits. Therefore, the long-term rate of investment return is critical to DCRB's long-term funding status.

At September 30, 2019, the actuarial value of assets set aside to pay pension benefits was about \$2.3 billion for the Teachers Retirement Fund (TRF) and about \$6.3 billion for the Police Officers and Fire Fighters' Retirement Fund (POFRF) for a total of \$8.6 billion. The fair value of these assets at September 30, 2019, included on the financial statements of DCRB, was \$2.3 billion for the TRF and \$6.3 billion for the POFRF for a total of \$8.6 billion. Therefore, when viewing the actuarial funding status in this case, the market value of assets would provide a similar funding position to the actuarial value of assets as of the September 30, 2019 valuation.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2019 AND 2018**

FINANCIAL ANALYSIS SUMMARY

Net position may serve over time as a useful indication of DCRB's financial strength. At the close of fiscal years 2019 and 2018, the net position of DCRB totaled \$8.5 billion and \$8.2 billion, respectively. Net position serves to meet DCRB's ongoing obligations to Plan participants and their survivors and beneficiaries.

SUMMARY OF FINANCIAL INFORMATION

The following Condensed and Combining Statements of Fiduciary Net Position and Changes in Fiduciary Net Position present financial information for the combined Funds and compares fiscal years 2019, 2018, and 2017.

Condensed and Combining Statements of Fiduciary Net Position

(Dollars in thousands)

	2019	2018	2017	2019 Percent Change	2018 Percent Change
Assets					
Cash and Short-Term Investments	\$ 76,434	\$ 59,334	\$ 88,216	28.8 %	(32.7)%
Receivables	8,620	8,657	63,684	(0.4)	(86.4)
Prepaid Expenses	151	-	-		
Investments	8,453,602	8,144,235	7,675,417	3.8	6.1
Total Assets	<u>8,538,807</u>	<u>8,212,226</u>	<u>7,827,317</u>	4.0	4.9
Liabilities					
Other Payables	6,977	7,973	6,337	(12.5)	25.8
Investment Commitments Payable	10,985	4,377	65,939	151.0	(93.4)
Total Liabilities	<u>17,962</u>	<u>12,350</u>	<u>72,276</u>	45.4	(82.9)
Net Position Restricted for Pensions	<u>\$ 8,520,845</u>	<u>\$ 8,199,876</u>	<u>\$ 7,755,041</u>	3.9 %	5.7 %

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2019 AND 2018**

Condensed and Combining Statements of Changes in Fiduciary Net Position

(Dollars in thousands)

	2019	2018	2017	2019 Percent Change	2018 Percent Change
Additions					
Employer Contributions	\$ 144,627	\$ 164,642	\$ 202,412	(12.2)%	(18.7)%
Plan Member Contributions	78,675	74,802	67,788	5.2	10.3
Net Investment Income	318,034	410,971	894,864	(22.6)	(54.1)
Other Income	3,318	3,394	3,375	(2.2)	0.6
Total Additions (Reductions)	<u>544,654</u>	<u>653,809</u>	<u>1,168,439</u>	(16.7)	(44.0)
Deductions					
Benefit Payments	202,813	185,224	164,606	9.5	12.5
Refunds	7,951	7,706	7,813	3.2	(1.4)
Administrative Expenses	12,921	16,044	17,559	(19.5)	(8.6)
Total Deductions	<u>223,685</u>	<u>208,974</u>	<u>189,978</u>	7.0	10.0
Change In Net Position	<u>\$ 320,969</u>	<u>\$ 444,835</u>	<u>\$ 978,461</u>	(27.8)%	(54.5)%

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2019 AND 2018**

FINANCIAL HIGHLIGHTS

The Teachers' Retirement Fund financial highlights for fiscal year 2019 are as follows:

- Net position restricted for pensions as of September 30, 2019 was \$2.3 billion, an increase of \$88.4 million (4.1%) over fiscal year 2018.
- Investment income, net of investment expenses, for fiscal year 2019 was \$85.0 million, a time-weighted return of 3.8%. Investment income, net of investment expenses, for fiscal year 2018 was \$94.1 million, a time-weighted return of 5.4%.
- Total additions for fiscal year 2019 were \$179.7 million, a decrease of \$14.8 million (7.6%) from fiscal year 2018. In fiscal year 2018, there was a total decrease of \$137.1 million from fiscal year 2017. Employer contributions for fiscal year 2019 were \$53.3 million, a decrease of \$5.7 million (9.7%) from fiscal year 2018. Teachers' Plan member contributions for fiscal year 2019 were \$40.4 million, an increase of \$0.1 million (0.3%) over fiscal year 2018. Other income for fiscal year 2019 was \$0.9 million, which decreased \$155 thousand from the fiscal year 2018 amount of \$1.0 million.
- Total deductions for fiscal year 2019 were \$91.3 million, an increase of \$2.3 million (2.6%) over fiscal year 2018. Pension benefit payments for fiscal year 2019 were \$81.5 million, an increase of \$3.0 million (3.9%) over fiscal year 2018. Refunds of member contributions for fiscal year 2019 were \$6.4 million, an increase of \$292 thousand (4.8%) over fiscal year 2018. Administrative expenses for fiscal year 2019 were \$3.4 million, which was a decrease of \$1.1 million (23.1%) from the fiscal year 2018 amount of \$4.5 million.
- The Board's funding objective is to meet long-term pension benefit obligations. As of September 30, 2019, the date of the latest actuarial valuation, the TRF's ratio of plan net position to total pension liability (at September 30, 2019) was 90.79%. In general, this means that for each dollar's worth of future pension liability, the TRF has accumulated \$0.91 to meet that obligation. This ratio decreased 5.42% over the prior year funded ratio of 96.21%.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
MANAGEMENT'S DISCUSSION AND ANALYSIS
SEPTEMBER 30, 2019 AND 2018**

The Police Officers and Fire Fighters' Retirement Fund financial highlights for fiscal year 2019 are as follows:

- Net position restricted for pensions as of September 30, 2019 was \$6.3 billion, an increase of \$232.6 million (3.9%) over fiscal year 2018.
- Investment income, net of investment expenses, for fiscal year 2019 was \$233.0 million, with a return of 3.8%. Investment income, net of investment expenses, for fiscal year 2018 was \$316.8 million, a return of 5.4%.
- Total additions for fiscal year 2019 were \$364.9 million, a decrease of \$94.3 million from fiscal year 2018. In fiscal year 2018, there was a total decrease of \$377.6 million from fiscal year 2017. Employer contributions for fiscal year 2019 were \$91.3 million, a decrease of \$14.3 million (13.6%) from fiscal year 2018. Police and Fire Fighters' Plan member contributions for fiscal year 2019 were \$38.2 million, an increase of \$3.8 million (10.9%) over fiscal year 2018. Other income for fiscal year 2019 was \$2.4 million, which was unchanged as compared to the fiscal year 2018 amount of \$2.4 million.
- Total deductions for fiscal year 2019 were \$132.4 million, an increase of \$12.4 million (10.3%) over fiscal year 2018. Pension benefit payments for fiscal year 2019 were \$121.3 million, an increase of \$14.5 million or 13.6% over fiscal year 2018. Refunds of member contributions for fiscal year 2019 were \$1.5 million, a decrease of \$47.0 thousand (3.0%) from fiscal year 2018. Administrative expenses for fiscal year 2019 were \$9.5 million, a decrease of \$2.1 million (18.1%) from the fiscal year 2018 amount of \$11.6 million.
- The Board's funding objective is to meet long-term pension benefit obligations. As of September 30, 2019, the date of the latest actuarial valuation, the POFRF's ratio of plan net position to total pension liability (at September 30, 2019) was 111.63%. In general, this means that for each dollar's worth of future pension liability, the POFRF has accumulated about \$1.12 to meet that obligation. This ratio decreased 2.76% over the prior year ratio of 115.17%.

ADDITIONAL INFORMATION.

These financial statements of the District Retirement Funds are presented in accordance with accounting principles generally accepted in the United States of America. Questions about these financial statements or other inquiries should be directed to the Executive Director, District of Columbia Retirement Board, 900 7th Street, NW, 2nd Floor, Washington, D.C. 20001.

COMBINING FINANCIAL STATEMENTS

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
COMBINING STATEMENTS OF FIDUCIARY NET POSITION
SEPTEMBER 30, 2019 AND 2018
(DOLLAR AMOUNTS IN THOUSANDS)**

	2019			2018			
	Teachers' Retirement Fund	Police Officers and Fire Fighters' Retirement Fund		Teachers' Retirement Fund	Police Officers and Fire Fighters' Retirement Fund		Total
		Total			Total		
ASSETS							
Cash and Short-Term Investments	\$ 20,298	\$ 56,136	\$ 76,434	\$ 15,735	\$ 43,599	\$ 59,334	
Receivables:							
Federal Government	437	1,161	1,598	568	1,054	1,622	
Investment Sales Proceeds	252	695	947	272	752	1,024	
Interest and Dividends	2	6	8	2	6	8	
Employee Contributions	3,227	2,840	6,067	3,196	2,807	6,003	
Total Receivables	<u>3,918</u>	<u>4,702</u>	<u>8,620</u>	<u>4,038</u>	<u>4,619</u>	<u>8,657</u>	
Prepaid Expenses	41	110	151	-	-	-	
Investments at Fair Value:							
Domestic Equity	606,643	1,677,696	2,284,339	585,891	1,623,381	2,209,272	
International Equity	618,471	1,710,408	2,328,879	615,500	1,700,514	2,316,014	
Fixed Income	714,375	1,975,633	2,690,008	676,194	1,873,591	2,549,785	
Real Assets	181,943	503,170	685,113	183,811	509,300	693,111	
Private Equity	123,558	341,705	465,263	98,427	277,626	376,053	
Total Investments at Fair Value	<u>2,244,990</u>	<u>6,208,612</u>	<u>8,453,602</u>	<u>2,159,823</u>	<u>5,984,412</u>	<u>8,144,235</u>	
Total Assets	<u>2,269,247</u>	<u>6,269,560</u>	<u>8,538,807</u>	<u>2,179,596</u>	<u>6,032,630</u>	<u>8,212,226</u>	
LIABILITIES							
Accounts Payable and Other Liabilities	1,704	4,733	6,437	2,170	5,348	7,518	
Due to Federal Government	144	396	540	159	296	455	
Investment Commitments Payable	2,917	8,068	10,985	1,161	3,216	4,377	
Total Liabilities	<u>4,765</u>	<u>13,197</u>	<u>17,962</u>	<u>3,490</u>	<u>8,860</u>	<u>12,350</u>	
Net Position Restricted for Pensions	<u>\$2,264,482</u>	<u>\$6,256,363</u>	<u>\$8,520,845</u>	<u>\$2,176,106</u>	<u>\$6,023,770</u>	<u>\$8,199,876</u>	

See accompanying Notes to Basic Combining Financial Statements.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
COMBINING STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION
YEARS ENDED SEPTEMBER 30, 2019 AND 2018
(DOLLAR AMOUNTS IN THOUSANDS)**

	2019			2018		
	Teachers' Retirement Fund	Police Officers and Fire Fighters' Retirement Fund	Total	Teachers' Retirement Fund	Police Officers and Fire Fighters' Retirement Fund	Total
Additions						
Contributions:						
District Government	\$ 53,343	\$ 91,284	\$ 144,627	\$ 59,046	\$ 105,596	\$ 164,642
Plan Members	40,432	38,243	78,675	40,324	34,478	74,802
Total Contributions	<u>93,775</u>	<u>129,527</u>	<u>223,302</u>	<u>99,370</u>	<u>140,074</u>	<u>239,444</u>
Investment Income:						
Net Appreciation in Fair Value of Investments	74,878	204,976	279,854	84,279	288,839	373,118
Interest and Dividends	14,908	41,072	55,980	13,863	38,381	52,244
Total Gross Investment Income	<u>89,786</u>	<u>246,048</u>	<u>335,834</u>	<u>98,142</u>	<u>327,220</u>	<u>425,362</u>
Less:						
Investment Expenses	4,739	13,061	17,800	4,013	10,378	14,391
Net Investment Income	<u>85,047</u>	<u>232,987</u>	<u>318,034</u>	<u>94,129</u>	<u>316,842</u>	<u>410,971</u>
Other Income	883	2,435	3,318	1,038	2,356	3,394
Total Additions	<u>179,705</u>	<u>364,949</u>	<u>544,654</u>	<u>194,537</u>	<u>459,272</u>	<u>653,809</u>
Deductions						
Annuitant Benefit Payments	81,471	121,342	202,813	78,430	106,794	185,224
Refunds of Member Contributions	6,418	1,533	7,951	6,126	1,580	7,706
Administrative Expenses	3,440	9,481	12,921	4,474	11,570	16,044
Total Deductions	<u>91,329</u>	<u>132,356</u>	<u>223,685</u>	<u>89,030</u>	<u>119,944</u>	<u>208,974</u>
Change in Net Position	88,376	232,593	320,969	105,507	339,328	444,835
Net Position Restricted for Pensions:						
Beginning of Year	<u>2,176,106</u>	<u>6,023,770</u>	<u>8,199,876</u>	<u>2,070,599</u>	<u>5,684,442</u>	<u>7,755,041</u>
End of Year	<u>\$2,264,482</u>	<u>\$6,256,363</u>	<u>\$8,520,845</u>	<u>\$2,176,106</u>	<u>\$6,023,770</u>	<u>\$8,199,876</u>

See accompanying Notes to Basic Combining Financial Statements.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 1 ORGANIZATION

The District of Columbia Teachers' Retirement Fund (TRF) and the District of Columbia Police Officers and Fire Fighters' Retirement Fund (POFRF), collectively referred to as the Fund or the District Retirement Funds, are two separate single-employer defined benefit pension plans that were established in 1979 by the District of Columbia Retirement Reform Act (the Reform Act, Pub. L. 96- 122, D. C. Code § 1-701 et seq.). The Fund holds in trust the assets available to pay pension benefits to teachers, police officers, and firefighters of the District of Columbia Government. The Reform Act also established the District of Columbia Retirement Board.

The National Capital Revitalization and Self-Government Improvement Act of 1997 (the Revitalization Act, Title XI of the Balanced Budget Act of 1997, Pub. L. 105-33) transferred significant assets and liabilities of the District Retirement Funds to the Federal Government. The Revitalization Act transferred to the Federal Government the liability for retirement benefits for employee service credit earned prior to July 1, 1997, by participants of the District Retirement Funds. The assets transferred to the Federal Government were intended to partially fund this liability.

On September 18, 1998, the Council of the District of Columbia (the Council) enacted the Police Officers, Firefighters, and Teachers Retirement Benefit Replacement Plan Act of 1998 (the Replacement Act). The Replacement Act established the District Retirement Funds for employee service earned after June 30, 1997 and provided for full funding of these benefits on an actuarially sound basis.

The Board is an independent agency of the District of Columbia government that is responsible for managing the assets of the TRF and the POFRF. Although the assets of these funds are commingled for investment purposes, each fund's assets may only be used for the payment of benefits to the participants of that fund and certain administrative expenses.

The District Retirement Funds are included in the District's Comprehensive Annual Financial Report as a pension trust fund.

NOTE 2 FUND ADMINISTRATION AND DESCRIPTION

District of Columbia Retirement Board

The Board consists of 12 trustees, three appointed by the Mayor of the District, three appointed by the Council of the District, and six elected by the active and retired participants. Included are one active and one retired representative each, from the police officers, firefighters, and teachers. Each of the six representatives of the Plans' participants is elected by the respective groups of active and retired employees. In addition, the District's Chief Financial Officer or his designee serves as a nonvoting, ex-officio trustee.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 2 FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

District of Columbia Retirement Board (Continued)

Since its inception, the Board has operated under a committee system which provides a two-tiered process for fiduciary review and analysis. In this manner, the Board, consistent with its fiduciary duties, reviews all issues brought before it. The Board has six standing committees: Benefits, Audit, Fiduciary, Investments, Legislative, and Operations. To implement its policies, the Board retains an executive director and other staff who are responsible for the day-to-day management of the District Retirement Funds and the administration of the benefits paid from the Funds.

Teachers' Retirement Fund

Other Entities involved in Plan Administration – The District of Columbia Public School's (the DCPS) Office of Human Resources makes decisions regarding voluntary and involuntary retirement, survivor benefits, and annual medical and income reviews.

Benefits Calculation – DCRB's Benefits Department receives the approved retirement applications for all active Plan members found eligible for retirement by the DCPS Office of Human Resources and carries out the day-to-day processing of retirement benefits. DCRB also processes employee requests for refunds of contributions and purchases of service.

Eligibility – Permanent, temporary, part-time and probationary teachers and certain other employees of the District of Columbia public day schools are automatically enrolled in the Teachers' Retirement Fund on their date of employment. Certain D.C. Public Charter School employees are also eligible to be participants. However, substitute teachers and employees of the Department of School Attendance and Work Permits are not covered.

Title 38, Chapter 20 of the D.C. Official Code (D.C. Code § 38-2021.01 et seq. (2001 Ed.)) establishes benefit provisions which may be amended by the District City Council. For employees hired before November 1, 1996, the annual retirement benefit is the average salary, as defined, multiplied by 1.5% for each of the first five years of service, plus 1.75% for each of the second five years; plus 2% for each additional year over 10 years. For employees hired on or after November 1, 1996, the annual retirement benefit is the average salary, as defined, multiplied by 2% for each year of service. The average salary is the highest average consecutive 36 months of pay.

The annuity may be further increased by crediting unused sick leave as of the date of retirement. Participants receiving retirement benefits receive an annual benefit increase proportional to changes in the Consumer Price Index; however, the annual increase may not exceed 3% for participants hired on or after November 1, 1996. Participants may select from among several survivor options.

Participants who have 5 years of school service (by working for the District of Columbia public school system), and who become disabled and can no longer perform their jobs satisfactorily, may be eligible for disability retirement. Such disability retirement benefits are calculated in the same manner as a retirement benefit, however, a minimum disability benefit applies.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 2 FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

Teachers' Retirement Fund (Continued)

Voluntary retirement is available for teachers who have a minimum of 5 years of school service and who achieve the following age and length of service requirements:

- at age 62 with 5 years of service;
- at age 60 with 20 years of service; and
- at age 55 with 30 years of service; if hired before November 1, 1996; or
- at any age with 30 years of service, if hired by the school system on or after November 1, 1996.

Employees who are involuntarily separated other than for cause and who have 5 years of school service, may be eligible for retirement at any age with 25 years of service or at age 50 with 20 years of service.

An involuntary retirement benefit is reduced if, at the time of its commencement, the participant is under the age of 55.

Police Officers and Fire Fighters' Retirement Fund

Other Entities involved in Plan Administration – The District of Columbia Police Officers and Fire Fighters' Retirement and Relief Board makes findings of fact, conclusions of law, and decisions regarding eligibility for retirement and survivor benefits, determines the extent of disability, and conducts annual medical reviews. The Police and Fire Clinic determines medical eligibility for disability retirement.

Benefits Calculation – DCRB's Benefits Department receives the retirement orders for retirement benefit calculations for all active Plan members found eligible for retirement by the District of Columbia Police Officers and Fire Fighters' Retirement and Relief Board and carries out the day-to-day processing of retirement benefits. DCRB also processes employee requests for refunds of contributions and purchases of service. Effective 2013, DCRB began conducting annual disability income reviews.

Eligibility – A participant becomes a member when he/she begins work as a police officer or firefighter in the District. Cadets are not eligible to join the Fund.

Retirement and disability benefit provisions for District of Columbia police officers and firefighters are established by the "Policemen and Firemen's Retirement and Disability Act" (D.C. Code § 5-701 et seq. (2001 Ed.)).

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 2 FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

Police Officers and Fire Fighters' Retirement Fund (Continued)

Members Hired Before February 15, 1980 – Members are eligible for optional retirement with full benefits at any age after 20 years of departmental service, or for deferred retirement at age 55 after five years of departmental service. The annual basic retirement benefit equals 2.5% of average base pay, which is defined as the highest average consecutive 12 months of base pay, multiplied by departmental service through 20 years; plus 3% of average base pay multiplied by average base pay times departmental service over 20 years; plus 2.5% of average base pay multiplied by years of other creditable service; however, the aggregate annual basic retirement benefit may not exceed 80% of the member's average base pay. Members terminated after five years of police or fire service are entitled to a deferred pension beginning at age 55. Benefits are also provided to certain survivors of active, retired, or terminated vested members. Retirement benefits are increased by the same percentage in base pay granted to active participants.

Members with a service-related disability receive a disability retirement benefit of 2.5% of average base pay multiplied by the number of years of creditable service. A minimum annual disability retirement benefit of 66⅔% of average base pay and a maximum annual disability retirement benefit of 70% of average base pay apply.

Members with a nonservice related disability and at least five years of departmental service receive a disability retirement benefit of 2% of average base pay multiplied by the number of years of creditable service. A minimum annual disability retirement benefit of 40% of average base pay and a maximum annual disability retirement benefit of 70% of average base pay apply.

Members Hired On or After February 15, 1980 and Before November 10, 1996 –Members are eligible for optional retirement with full benefits at age 50 with at least 25 years of departmental service, or after age 55 with five years of departmental service. The annual basic retirement benefit equals 2.5% of average base pay, which is defined as the highest average consecutive 36 months of base pay, multiplied by the number of years of creditable service through 25 years; plus 3% of average base pay multiplied by the number of years of departmental service over 25 years; plus 2.5% of average base pay multiplied by the number of years of other creditable service; however, the aggregate annual basic retirement benefit may not exceed 80% of the member's average base pay. Members separated from the Police or Fire Department after five years of departmental service are entitled to a deferred pension beginning at age 55.

Benefits are also provided to certain survivors of active, retired, or terminated vested members. Members who retired after February 15, 1980 receive annual benefit increases proportional to changes in the Consumer Price Index.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 2 FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

Police Officers and Fire Fighters' Retirement Fund (Continued)

Members Hired on or After November 10, 1996 – Members are eligible for retirement at any age, with at least 25 years of departmental service or after age 55 with five years of departmental service. The annual basic retirement benefit equals 2.5% of average base pay, which is defined as the highest average consecutive 36 months of base pay, multiplied by creditable service; however, the aggregate annual basic retirement benefit may not exceed 80% of the average base pay. Members separated after five years of departmental service are entitled to a deferred pension beginning at age 55. Benefits are also provided to certain survivors of active, retired, or terminated vested members. Members receive annual benefit increases proportional to changes in the Consumer Price Index, however, the increase is capped at 3%.

Members with a service-related disability receive a disability retirement benefit of 70% of base pay multiplied by the percentage of disability. A minimum annual disability retirement benefit of 40% of base pay applies.

Members with a nonservice related disability and at least five years of departmental service receive a disability retirement benefit of 70% of base pay multiplied by the percentage of disability. A minimum annual disability retirement benefit of 30% of base pay applies.

Prior to reaching age 50, a disability retirement benefit will be reduced or terminated if outside earnings exceed a certain limit.

Participant Data

The number of participants for the years ended September 30 was as follows:

<u>TRF</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Retirees and Survivors Receiving Benefits (Post June 30, 1997)	4,059	3,990	3,899
Active Plan Members	5,226	5,066	5,199
Vested Terminations	1,446	1,429	1,330
Total Participants	<u>10,731</u>	<u>10,485</u>	<u>10,428</u>
<u>POFRF</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Retirees and Survivors Receiving Benefits (Post June 30, 1997)	3,699	3,441	3,215
Active Plan Members	5,406	5,349	5,312
Vested Terminations	261	315	340
Total Participants	<u>9,366</u>	<u>9,105</u>	<u>8,867</u>

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 2 FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

Participant Data

The combined number of participants for both Funds for the years ended September 30 was as follows:

Total	2019	2018	2017
Retirees and Survivors Receiving Benefits (Post June 30, 1997)	7,758	7,431	7,114
Active Plan Members	10,632	10,415	10,511
Vested Terminations	1,707	1,744	1,670
Total Participants	<u>20,097</u>	<u>19,590</u>	<u>19,295</u>

Contributions

As a condition of participation, members are required to contribute certain percentages of salaries as authorized by statute. Fund members contribute by salary deductions at rates established by D.C. Code § 5-706 (2001 Ed.). Members contribute 7% (or 8% for Teachers and Police Officers and Firefighters hired on or after November 1, 1996 and November 10, 1996, respectively) of annual gross salary, including any differential for special assignment and longevity, but excluding overtime, holiday, or military pay.

The District is required to contribute the amounts necessary to finance the Plan benefits of its members through annual contributions at actuarially determined amounts in accordance with the provisions of the Replacement Act. The amount of the District contributions for fiscal years 2019 and 2018 were equal to the amounts computed, if any, by the Board's independent actuary.

Contribution requirements of members are established by D.C. Code §5-706 and requirements for District of Columbia government contributions to the Fund are established at D.C. Code §1-907.02 (2001 Ed.), which may be amended by the City Council.

NOTE 3 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting

DCRB's financial statements were prepared in accordance with accounting principles generally accepted in the United States (GAAP) using the accrual basis of accounting. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and reporting principles. Employee contributions are recognized at the time compensation is paid to Plan members. Employer contributions are recognized when due and the employer has made a formal commitment to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of the retirement Plan's commitment.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 3 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Federal Income Tax Status

The District Retirement Funds are qualified plans under section 401(a) of the Internal Revenue Code and are exempt from federal income taxes under section 501(a).

Use of Estimates in Preparing Financial Statements

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Board to make estimates and assumptions that affect the reported amounts of assets, liabilities, additions and deductions to net position restricted for pensions and disclosure of contingent assets and liabilities at the date of the financial statements and during the reporting period. Actual results could differ from those estimates.

Investment Expenses

The District of Columbia Appropriation Act authorized Fund earnings to be used for investment expenses incurred in managing the assets and administering the Fund. The total investment expenses borne by the District Retirement Funds was \$17,800,245 in 2019 and \$14,390,879 in 2018. A significant number of the alternative investment managers provide account valuations net of management expenses. Those expenses are netted against investment income and, because they are not separable, are recorded and reported net of management expenses in the net (depreciation) appreciation in the fair value of investments.

Reclassification

Certain accounts in the prior-year financial statements have been reclassified for comparative purposes to conform to the presentation in the current-year financial statements.

NOTE 4 INVESTMENTS

The Board is authorized to manage and control the investment of the District Retirement Funds' assets. The Board broadly diversifies the investments of the District Retirement Funds to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so, as required by D.C. Code § 1-741(a)(2)(C), (2001 Ed.).

Master Trust – The Board has pooled all of the assets under its management (the Investment Pool), as is authorized by D.C. Code § 1-903(b), (2001 Ed.), with a master custodian under a master trust arrangement (the Master Trust). Using an investment pool, each Fund owns an undivided proportionate share of the pool.

District and employee contributions are deposited in the respective Retirement Fund for which the contribution was made, and benefit payments and employee contribution refunds are withdrawn from the Fund in which the recipient participates. Investment performance and administrative expenditures are allocated between the two Funds based upon their proportionate net position in the pool.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

The fair values of investments of the Investment Pool as of September 30 are as follows:

	<u>2019</u>	<u>2018</u>
	(Dollars in Thousands)	
Cash and short-term investments	\$ 76,434	\$ 59,334
Investments:		
Domestic Equity	2,284,339	2,209,272
International Equity	2,328,879	2,316,014
Fixed Income	2,690,008	2,549,785
Real Assets	685,113	693,111
Private Equity	465,263	376,053
Total Investments	<u>8,453,602</u>	<u>8,144,235</u>
Total	<u>\$ 8,530,036</u>	<u>\$ 8,203,569</u>

Annual money-weighted rate of return – The money-weighted rate of return shows investment performance when taking into account the impact of cash infusion into and disbursements from the pension system. The rates are shown net of fees. The rate for 2018, in the prior-year financial statements, were shown gross of fees, and it is restated in these financial statements. For the years ended September 30, 2019 and 2018, the money-weighted rates of return, as calculated by the custodian based on a month-end net flow weighting method, were as follows:

	<u>FY 2019</u>	<u>FY 2018</u>
Total Portfolio	3.84%	5.34%

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

Debt Instruments – As of September 30, 2019, the Investment Pool held the following debt instruments:

(Dollars in Thousands)

Investment Type	Fair Value	% of Segment	Duration (Years)	Rating*
US Agency	\$ 25,753	0.96 %	3.39	AA+
Asset Backed	11,387	0.42	2.73	AAA
Bank Loans	396,347	14.73	0.02	B
Cash Equivalent	26,757	0.99	-	A-1+
CMBS	18,919	0.70	5.09	AA+
CMO	279	0.01	0.96	AA+
Corporate - US	295,936	11.00	6.87	BBB+
Corporate - Euro	16,518	0.61	3.79	A-
Foreign	507,563	18.87	6.23	BBB+
Mortgage Pass-Through	249,308	9.27	2.55	AA+
Municipal	5,685	0.21	11.41	AA-
Options	11,258	0.42	-	
Private Placement	141,086	5.24	2.69	CCC+
US Treasury	980,713	36.46	7.34	AA+
Unclassified	2,499	0.09	-	BB-
	<u>\$ 2,690,008</u>	<u>100.00 %</u>		
Total Fixed Income				

* Using quality ratings provided by Standard & Poor's

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

As of September 30, 2018, the Investment Pool held the following debt instruments:

(Dollars in Thousands)

Investment Type	Fair Value	% of Segment	Duration (Years)	Rating*
US Agency	\$ 28,265	1.11 %	3.62	AA+
Asset Backed	14,031	0.55	2.44	AAA
Bank Loans	336,943	13.21	0.03	B-
Cash Equivalent	52,470	2.06	-	A-1+
CMBS	16,866	0.66	5.09	AA+
CMO	722	0.03	1.07	AA+
Corporate - US	307,830	12.07	6.03	BBB
Corporate - Euro	15,918	0.62	2.23	BBB+
Foreign	446,869	17.53	5.71	A
Mortgage Pass-Through	251,733	9.87	4.91	AA+
Municipal	5,592	0.22	10.77	AA-
Options	15,949	0.63	-	
Private Placement	108,984	4.27	3.29	CCC+
US Treasury	944,221	37.03	7.00	AA+
Unclassified	3,392	0.13	-	BB-
Total Fixed Income	<u>\$ 2,549,785</u>	<u>100.00 %</u>		

* Using quality ratings provided by Standard & Poor's

Interest Rate Risk – Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, an investment with a longer maturity will have a greater sensitivity to fair value changes that are related to market interest rates. The Board monitors the interest rate risk inherent in its portfolio by measuring the weighted average duration of its portfolio. Duration is a measure of a debt investment's exposure to fair value changes arising from changing interest rates. It uses the present value of cash flows, weighted for those cash flows as a percentage of the investment's full price. As a general rule, the risk and return of the Board's fixed income segment of the portfolio is compared to the Barclays Capital U.S. Universal Index. To mitigate interest rate risk, the fixed income segment is expected to maintain a weighted average duration (sensitivity to interest rate changes) within +/-2 years of the duration of this Index.

Credit Risk – Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. Unless specifically authorized otherwise in writing by the Board, fixed income managers invest in investment grade instruments rated in the top four rating categories by a recognized statistical rating service.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

Custodial Credit Risk – The Funds had custodial credit risk exposure during fiscal 2019 totaling \$2,739,253. Investments held by the custodian on behalf of DCRB were held in an account in the name of DCRB. Funds not invested at the end of a given day were placed in overnight instruments in the name of DCRB.

Foreign Currency Risk – Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. As a general policy, investment managers with authority to invest in issuers denominated in a foreign currency may reduce exposure to currency risk by systematically hedging foreign currency positions back to U.S. dollars through the forward currency markets. Since the forward exchange rate is seldom equal to the spot exchange rate, forward hedging gains and losses may arise. For the years ended September 30, 2019 and 2018, the Investment Pool held amounts in commingled funds which invested in foreign currencies totaling approximately \$3.2 billion and \$3.1 billion, respectively.

As of September 30, 2019, the Investment Pool held investments that were denominated in a currency other than the United States Dollar, as summarized below:

	Asset Class				Total
	Cash	Equities	Fixed Income	Private Equity	
	(Dollars in Thousands)				
Canadian Dollar	\$ -	\$ -	\$ -	\$ 18,057	\$ 18,057
British Sterling	-	-	-	13,808	13,808
Euro	-	-	-	40,961	40,961
Total Foreign	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 72,826</u>	<u>\$ 72,826</u>

As of September 30, 2018, the Investment Pool held investments that were denominated in a currency other than the United States Dollar, as summarized below:

	Asset Class				Total
	Cash	Equities	Fixed Income	Private Equity	
	(Dollars in Thousands)				
Canadian Dollar	\$ -	\$ -	\$ -	\$ 6,036	\$ 6,036
British Sterling	-	-	-	8,371	8,371
Swiss Franc	-	-	-	109	109
Euro	199	-	-	58,084	58,283
Total Foreign	<u>\$ 199</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 72,600</u>	<u>\$ 72,799</u>

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

Securities Lending Transactions – The Board's policies permit the District Retirement Funds to participate in securities lending transactions by relying on a Securities Lending Authorization Agreement, which authorizes the master custodian to lend the Board's securities to qualified broker-dealers and banks pursuant to a form of loan agreement.

The Board may participate in securities lending through its custodian in the future; however, it did not do so in fiscal years 2019 and 2018.

Derivative Investments – Derivatives are generally defined as contracts in which the value depends on, or derives from, the value of an underlying asset, reference rate, or index. Derivative investments generally contain exposure to credit risk, market risk, and/or legal risk. Credit risk is the exposure to the default of another party to the transaction (counterparty). Market risk is the exposure to changes in the market, such as a change in interest rates, currency exchange rates, or a change in the price or principal value of a security. The Board believes that all contracts entered into are legally permissible in accordance with the policy of the Board.

During 2019 and 2018, the District Retirement Funds, in accordance with the policy of the Board, and through the District Retirement Funds' investment managers who have full discretion over investment decisions, invested in various derivative instruments either to increase potential earnings or to hedge against potential losses.

TBAs (to-be-announced, sometimes referred to as dollar rolls) are used by the District Retirement Funds as an alternative to holding mortgage-backed securities outright to raise the potential yield and to reduce transaction costs. The selected TBAs are used because they are expected to behave the same in duration and convexity as mortgage-backed securities with identical credit, coupon, and maturity features. Credit risk is managed by limiting these transactions to primary dealers.

Market risk for this type of security is not significantly different from the market risk for mortgage-backed securities.

Foreign currency forwards, futures contracts, and foreign currency options, when used, are generally used by the District Retirement Funds for defensive purposes. These contracts hedge a portion of the District Retirement Funds' exposure to particular currencies on occasion when significant adverse short-term movement in exchange rate levels is expected.

Foreign currency forward and futures contracts can pose market risk when the maximum potential loss on a particular contract is greater than the value of the underlying investment. Market risks arise due to movements in the foreign exchange rates underlying the contracts used by the District Retirement Funds. Credit risk is managed by limiting transactions to counterparties with short-term credit ratings of A1 or P1 or by trading on organized exchanges. Market risk for currency options is limited to the purchase cost. Credit risk for currency options is also managed by limiting transactions to counterparties with investment-grade ratings or by trading on organized exchanges.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

Equity index futures were also used by the District Retirement Funds in order to gain exposure to equity markets in a more efficient and liquid manner than directly investing in all of the underlying equity securities. Equity index futures may pose market risk when the maximum potential loss on a particular contract is greater than the value of the underlying investment. Market risks arise due to movements in the equities markets underlying the contracts used by the District Retirement Funds. The notional amounts of the contracts are not included in the derivatives holdings disclosed. Credit risk is managed by dealing with member firms of the futures exchanges.

Exchange-traded and over-the-counter bond futures and options were used by the District Retirement Funds to gain exposure to fixed income markets in a more efficient and liquid manner than by purchasing the underlying bonds. Market risk for these futures and options is limited to purchase cost. Credit risk is managed by limiting transactions to counterparties with investment-grade ratings or by trading with member firms of organized exchanges.

Warrants were used by the District Retirement Funds to gain equity exposure and to enhance performance. Warrants are often distributed by issuers to holdings of common stock and bonds, and are held for the same fundamental reasons as the original common stock and/or bond holdings. Rights are a security that gives the holder the entitlement to purchase new shares issued by a corporation at a predetermined price in proportion to the number of shares already owned.

Market risk for warrants and rights is limited to the purchase cost. Credit risk for warrants and rights is similar to the underlying equity and/or bond holdings. Again, all such risks are monitored and managed by the District Retirement Funds' external investment managers who have full discretion over such investment decisions.

Swaps represent an agreement between two or more parties to exchange a sequence of cash flows during a predetermined timeframe. The District Retirement Funds utilize swaps for several different reasons: to manage interest rate fluctuations, to protect against a borrower default, and to gain market exposure without having to actually own the asset.

The District Retirement Funds may manage credit exposure through the use of credit default swaps. A credit default swap (CDS) is a contract whereby the credit risk associated with an investment is transferred by entering into an agreement with another party who, in exchange for periodic fees, agrees to make payments in the event of a default or other predetermined credit event. One of the main advantages of a CDS is that it allows for exposure to credit risk while limiting exposure to other risks such as interest rate and currency risk.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

The District Retirement Funds may also hold derivative instruments indirectly by participating in pooled, commingled, or short-term funds that hold derivatives. Information regarding any risks associated with these holdings is not generally available. The following is a list of derivatives as of September 30, 2019; there were no derivatives as of September 30, 2018.

Derivatives - Futures (dollars in thousands)

	Market Value September 30, 2019
Equity index futures	\$ 10,582
Fixed Income - convertible bonds	2
Fixed Income futures	2
Synthetic equity swaps	235
Warrants	2,031
Swaps	25,714
Total	<u>\$ 38,566</u>

Fair Value Measurements - DCRB categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and gives the highest priority to unadjusted quoted prices in active markets for identical assets (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

Level 1 – Unadjusted quoted prices for identical instruments in active markets.

Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3 – Valuations derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the Net Asset Value (NAV) per share (or its equivalent) are not classified in the fair value hierarchy as they do not have a readily determinable fair value.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. DCRB's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability.

Changes in Fair Value Levels

The availability of observable market data is monitored to assess the appropriate classification of financial instruments within the fair value hierarchy. Changes in economic conditions or model-based valuation techniques may require the transfer of financial instruments from one fair value level to another. In such instances, the transfer is reported at the beginning of the reporting period.

Plan management has evaluated the significance of transfers between levels based upon the nature of the investments and size of the transfer relative to total net assets available for benefits. For the year ended September 30, 2019, investments in private equity securities were placed under Level 3 as compared to the previous year based on management's re-evaluation of its valuation methodology.

The tables on pages 28 and 29 show the fair value leveling of the investments for the Investment Pool.

Equity securities classified in Level 1 of the fair value hierarchy are valued at the last sale price or official close price as of the close of trading on the applicable exchange where the security principally trades.

Equity and fixed income securities classified in Level 2 of the fair value hierarchy are valued at prices provided by independent pricing vendors. The vendors provide these prices after evaluating observable inputs including, but not limited to: quoted prices for similar securities, the mean between the last reported bid and ask prices (or the last bid price in the absence of an asked price), yield curves, yield spreads, credit ratings, deal terms, tranche level attributes, default rates, cash flows, prepayment speeds, broker/dealer quotations, inflation and reported trades.

Equity securities classified in Level 3 are valued with last trade data having limited trading volume. Real assets classified in Level 3 are real estate investments generally valued using the income approach by internal manager reviews or independent external appraisers. Unfunded commitments to purchase partnership interests in private equity funds as of September 30, 2019 and 2018 was \$544.9 million and \$508.9 million, respectively.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

Investments measured at the Net Asset Value (NAV) – The unfunded commitment and redemption frequency and notice period for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the tables on pages 29 and 30.

Real Assets – DCRB has made commitments to purchase partnership interests in real asset funds as part of its long-term asset allocation plan for private markets. As shown in the table on page 29, the unfunded commitments totaled \$365.9 million, as of September 30, 2019. This represents global investments in 39 real asset funds. The unfunded commitments totaled \$389.7 million, as of September 30, 2018 as shown in the table on page 30. This represented global investments in 35 real asset funds.

In general, investments in the private markets program are illiquid and redemptions are structurally limited over the life of the investment. The private equity program spans a range of underlying strategies including buyouts, growth equity/venture, private debt, secondaries, and fund-of-funds. The real asset program includes investments in a broad range of real estate strategies (i.e., core, value-added, opportunistic), infrastructure, and natural resources funds.

Domestic and International Equities – DCRB has investments in 3 funds with a domestic focus and 5 funds with an international focus, in which the equity securities maintain some level of market exposure; however, the level of market exposure may vary through time.

Fixed income – DCRB has investments in 6 funds, including corporate bonds, and U.S. Treasury obligations, with redemption notifications not greater than 30 days.

Investments measured at Fair Value (Dollars in 000s)				
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
September 30,	2019	(Level 1)	(Level 2)	(Level 3)
Investments by Fair Value Level				
Domestic Equity	\$ 288,973	\$ 278,237	\$ 10,736	\$ -
International Equity	206,937	206,937	-	-
Fixed Income	623,222	-	623,222	-
Real Assets	421,396	-	-	421,396
Private Equity	465,263	-	-	465,263
Total Investments by Fair Value Level	2,005,791	\$ 485,174	\$ 633,958	\$ 886,659
Investments Measured at the Net Asset Value (NAV)				
Domestic Equity	1,995,366			
International Equity	2,121,942			
Fixed Income	2,066,786			
Real Assets	263,717			
Total Investments Measured at NAV	6,447,811			
Total Investments	\$ 8,453,602			

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

Additional information for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the table below:

	September 30, 2019	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Domestic Equity	\$ 1,995,366	\$ -	Daily 3 times per month, monthly	None 2-5 days
International Equity	2,121,942	-	Daily, Monthly	3-30 days
Fixed Income	2,066,786	-	None	N/A
Real Assets	263,717	365,899		
Total Investments Measured at NAV	<u>\$ 6,447,811</u>	<u>\$ 365,899</u>		

Investments measured at Fair Value (Dollars in 000s)

	September 30, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Domestic Equity	\$ 312,861	\$ 297,016	\$ 15,845	\$ -
International Equity	166,670	166,670	-	-
Fixed Income	265,651	-	265,651	-
Real Assets	42,113	-	-	42,113
Private Equity	376,055	-	-	376,055
Total Investments by Fair Value Level	<u>1,163,350</u>	<u>\$ 463,686</u>	<u>\$ 281,496</u>	<u>\$ 418,168</u>

**Investments Measured at the Net
Asset Value (NAV)**

Domestic Equity	1,896,422
International Equity	2,149,344
Fixed Income	2,284,134
Real Assets	650,998
Total Investments Measured at NAV	<u>6,980,898</u>
Total Investments	<u>\$ 8,144,248</u>

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 4 INVESTMENTS (CONTINUED)

Additional information for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the table below:

	September 30, 2018	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Domestic Equity	\$ 1,896,422	\$ -	Daily	None
International Equity	2,149,344	-	3 times per month, monthly	2-5 days
Fixed Income	2,284,134	-	Daily, Monthly	3-30 days
Real Assets	650,998	389,696	None	N/A
Total Investments Measured at NAV	<u>\$ 6,980,898</u>	<u>\$ 389,696</u>		

NOTE 5 NET PENSION LIABILITY (ASSET)

The components of the net pension liability (asset) of the District Retirement Funds at September 30, 2019 and 2018 were as follows:

	2019		2018	
	TRF	POFRF	TRF	POFRF
	<i>(Dollars in thousands)</i>			
Total Pension Liability	\$ 2,494,291	\$ 5,604,573	\$ 2,261,867	\$ 5,265,874
Fiduciary Net Position	2,264,482	6,256,363	2,176,106	6,023,770
Net Pension Liability (Asset)	<u>\$ 229,809</u>	<u>\$ (651,790)</u>	<u>\$ 85,761</u>	<u>\$ (757,896)</u>
Ratio of Fiduciary Net Position to Total Pension Liability	90.79%	111.63%	96.21%	114.39%

Actuarial Assumptions - The total pension liability was determined based on an actuarial valuation as of September 30, 2019 using the following actuarial assumptions, applied to all periods included in the measurement:

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 5 NET PENSION LIABILITY (ASSET) (CONTINUED)

Teachers' Retirement Fund

Inflation	3.5%
Salary increases	5.50% - 8.63%, includes wage inflation of 4.25%
Investment rate of return	6.5%, net of pension plan investment expense
Mortality	Pre-retirement and post-retirement mortality rates were based on the RPH 2014 Blue Collar Mortality Table projected generationally with Scale BB, set back 1 year for males. Post-disability mortality rates were based on the RPH-2014 Disabled Mortality Table set back 6 years for males and set forward 7 years for females.
Cost of Living Adjustments	3.00% for those hired on or after 11/1/1996, 3.50% for those hired before 11/1/1996

Police and Firefighters' Retirement Fund

Inflation	3.5%
Salary increases	4.25% - 6.34%, includes wage inflation of 4.25%
Investment rate of return	6.5%, net of pension plan investment expense
Mortality	Pre-retirement and post-retirement mortality rates were based on the RPH 2014 Blue Collar Mortality Table projected generationally with Scale BB, set back 1 year for males. Post-disability mortality rates were based on the RPH-2014 Disabled Mortality Table set back 6 years for males and set forward 7 years for females.
Cost of Living Adjustments	3.00% for those hired on or after 11/1/1996, 3.50% for those hired before 11/1/1996

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 5 NET PENSION LIABILITY (ASSET) (CONTINUED)

All assets and liabilities are computed as of September 30, 2019. Demographic information was collected as of June 30, 2019. The actuarial assumptions used were based on the results of the most recent actuarial experience investigation for the period October 1, 2011 to September 30, 2015, dated July 18, 2017.

The discount rate used to measure the total pension liability was 6.5 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that the District contributions will be made in accordance with the Board's funding policy adopted in 2012 and revised in 2017. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return for each major asset class included in the pension plan's target asset allocation as of September 30, 2019 and 2018 are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Domestic Equity	20.0 %	7.8%
Foreign Equity (Developed)	16.0	8.1%
Foreign Equity (Emerging)	10.0	10.5%
U.S. Core Fixed Income	11.0	4.4%
Treasury Inflation-Protected Securities (TIPS)	6.0	3.3%
High Yield Bonds	4.0	6.8%
Bank Loans	3.0	5.7%
Foreign Bonds (Developed)	2.0	2.6%
Emerging Markets Debt (Local)	4.0	5.9%
Real Estate	6.0	7.1%
Natural Resources (Private)	2.0	7.8%
Infrastructure	3.0	7.8%
Private Equity	9.0	9.4%
Absolute Return	4.0	5.6%
Total	<u>100.0 %</u>	

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
NOTES TO BASIC COMBINING FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 AND 2018**

NOTE 5 NET PENSION LIABILITY (ASSET) (CONTINUED)

Disclosure of the sensitivity of the net pension liability to changes in the discount rate

The following presents the net pension liability of the Teachers' Retirement Fund and the Police Officers and Fire Fighters' Retirement Fund, calculated using the discount rate of 6.5%, as well as what the Plan's net pension liability calculated using a discount rate that is one percentage point lower (5.5%) or one percentage point higher (7.5%) than the current rate (dollar amounts in thousands):

FY 2019	1% Decrease (5.50%)	Current Discount Rate (6.50%)	1% Increase (7.50%)
Teachers' Plan's			
Net Pension Liability/(Asset)	\$ 669,520	\$ 229,809	\$ (117,925)
Police and Fire Fighters' Plan's			
Net Pension Liability/(Asset)	\$ 372,957	\$ (651,790)	\$ (1,460,879)
FY 2018	1% Decrease (5.50%)	Current Discount Rate (6.50%)	1% Increase (7.50%)
Teachers' Plan's			
Net Pension Liability/(Asset)	\$ 477,094	\$ 85,761	\$ (224,803)
Police and Fire Fighters' Plan's			
Net Pension Liability/(Asset)	\$ 232,199	\$ (757,896)	\$ (1,536,649)

REQUIRED SUPPLEMENTARY INFORMATION

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULES OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
YEARS ENDED SEPTEMBER 30
(DOLLAR AMOUNT IN THOUSANDS)**

Teachers' Retirement Fund

	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$ 72,429	\$ 67,877	\$ 65,911	\$ 61,599	\$ 53,297	\$ 50,409
Interest	144,165	137,704	131,657	124,370	118,378	112,204
Difference Between Expected and Actual Experience	103,719	(19,505)	(37,230)	2,656	(7,246)	-
Changes of Assumptions	-	-	14,106	-	-	-
Benefit Payments	(81,471)	(78,430)	(72,069)	(69,093)	(64,076)	(59,832)
Refunds	(6,418)	(6,126)	(6,166)	(6,205)	(5,576)	(5,790)
Net Change in Total Pension Liability	232,424	101,520	96,209	113,327	94,777	96,991
Total Pension Liability - Beginning	2,261,867	2,160,347	2,064,138	1,950,811	1,856,034	1,759,043
Total Pension Liability - Ending (a)	2,494,291	2,261,867	2,160,347	2,064,138	1,950,811	1,856,034
Plan Net Position						
Contributions - District Government	53,343	59,046	56,781	44,469	39,513	31,636
Contributions - Plan Member	40,432	40,324	34,364	33,591	31,621	28,751
Net Investment (Loss) Income	85,047	94,129	239,554	152,262	(72,647)	132,086
Benefit Payments	(81,471)	(78,430)	(72,069)	(69,093)	(64,076)	(59,832)
Administrative Expense	(3,440)	(4,474)	(4,721)	(4,746)	(4,543)	(3,787)
Refunds	(6,418)	(6,126)	(6,166)	(6,205)	(5,576)	(5,790)
Other Income	883	1,038	907	1,033	385	522
Change in Net Position	88,376	105,507	248,650	151,311	(75,323)	123,586
Plan Net Position - Beginning	2,176,106	2,070,599	1,821,949	1,670,638	1,745,961	1,622,375
Plan Net Position - Ending (b)	2,264,482	2,176,106	2,070,599	1,821,949	1,670,638	1,745,961
Net Pension Liability - Ending (a) - (b)	\$ 229,809	\$ 85,761	\$ 89,748	\$ 242,189	\$ 280,173	\$ 110,073
Ratio of Plan Net Position to Total Pension Liability - (b) / (a)	90.79%	96.21%	95.85%	88.27%	85.64%	94.07%
Covered Payroll	\$ 466,792	\$ 470,749	\$ 447,762	\$ 438,079	\$ 417,090	\$ 378,926
Net Pension Liability (Asset) as a Percentage of Covered Payroll	49.23%	18.22%	20.04%	55.28%	67.17%	29.05%

Note: This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULES OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS (CONTINUED)
YEARS ENDED SEPTEMBER 30
(DOLLAR AMOUNT IN THOUSANDS)**

Police and Fire Fighters' Retirement Fund

	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$ 180,928	\$ 182,641	\$ 196,629	\$ 198,020	\$ 192,114	\$ 176,102
Interest	338,288	318,719	300,626	282,285	257,943	235,097
Difference Between Expected and Actual Experience	(57,642)	(84,452)	(188,549)	(106,840)	(2,477)	-
Changes of Assumptions	-	-	67,256	-	-	-
Benefit Payments	(121,342)	(106,794)	(92,537)	(79,137)	(63,634)	(52,784)
Refunds	(1,533)	(1,580)	(1,647)	(2,179)	(1,396)	(1,637)
Net Change in Total Pension Liability	338,699	308,534	281,778	292,149	382,550	356,778
Total Pension Liability - Beginning	5,265,874	4,957,340	4,675,562	4,383,413	4,000,863	3,644,085
Total Pension Liability - Ending (a)	5,604,573	5,265,874	4,957,340	4,675,562	4,383,413	4,000,863
Plan Net Position						
Contributions - District Government	91,284	105,596	145,631	136,115	103,430	110,766
Contributions - Plan Member	38,243	34,478	33,424	32,785	33,679	32,821
Net Investment (Loss) Income	232,987	316,842	655,310	415,157	(187,283)	338,894
Benefit Payments	(121,342)	(106,794)	(92,537)	(79,137)	(63,634)	(52,784)
Administrative Expense	(9,481)	(11,570)	(12,838)	(12,918)	(11,939)	(9,730)
Refunds	(1,533)	(1,580)	(1,647)	(2,179)	(1,396)	(1,637)
Other Income	2,435	2,356	2,468	2,810	1,012	1,342
Change in Net Position	232,593	339,328	729,811	492,633	(126,131)	419,672
Plan Net Position - Beginning	6,023,770	5,684,442	4,954,631	4,461,998	4,588,129	4,168,457
Plan Net Position - Ending (b)	6,256,363	6,023,770	5,684,442	4,954,631	4,461,998	4,588,129
Net Pension Liability (Asset) - Ending (a) - (b)	\$ (651,790)	\$ (757,896)	\$ (727,102)	\$ (279,069)	\$ (78,585)	\$ (587,266)
Ratio of Plan Net Position to Total Pension Liability (Asset) - (b) / (a)	111.63%	114.39%	114.67%	105.97%	101.79%	114.68%
Covered Payroll	\$ 460,686	\$ 454,209	\$ 441,904	\$ 438,114	\$ 446,201	\$ 426,135
Net Pension Liability (Asset) as a Percentage of Covered Payroll	(141.48)%	(166.86)%	(164.54)%	(63.70)%	(17.61)%	(137.81)%

Note: This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULES OF EMPLOYER CONTRIBUTIONS
YEARS ENDED SEPTEMBER 30
(DOLLAR AMOUNTS IN THOUSANDS)**

Teachers' Retirement Fund

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially Determined Employer Contribution	\$ 53,343	\$ 59,046	\$ 56,781	\$ 44,469	\$ 39,513	\$ 31,636	\$ 6,407	\$ -	\$ -	\$ -
Actual Employer Contributions	53,343	59,046	56,781	44,469	39,513	31,636	6,407	-	-	-
Annual Contribution Deficiency (Excess)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered Payroll	\$ 466,792	\$ 470,749	\$ 447,762	\$ 438,079	\$ 417,090	\$ 378,926	\$ 369,071	\$ 381,235	\$ 384,455	\$ 337,516
Actual Contributions as a Percentage of Covered Payroll	11.43%	12.54%	12.68%	10.15%	9.47%	8.35%	1.74%	0.00%	0.00%	0.00%

Notes to Schedule:

Valuation Date: For the fiscal years on and before FY 2019, actuarially determined contributions amounts are calculated as of the beginning of the fiscal year.

Actual contributions are based on valuations as of October 1, two years prior to end of fiscal year in which contributions are reported.

Actuarial valuations are performed every year. The assumptions shown below are from the currently approved assumptions and assumptions used to determine all contributions in the past would not have been the same.

Actuarial cost method	Entry age normal
Amortization method	Level dollar, closed
Remaining amortization period	Remaining amortization periods range from 12 to 20 years
Asset valuation method	5-year smoothed market
Inflation	3.50%
Salary increases	5.50% to 8.63%; includes wage inflation of 4.25%
Investment rate of return	6.50%, net of pension plan investment expense
Mortality	Pre-retirement and post-retirement mortality rates were based on the RPH 2014 Blue Collar Mortality Table projected generationally with Scale BB, set back 1 year for males. Post-disability mortality rates were based on the RPH-2014 Disabled Mortality Table set back 6 years for males and set forward 7 years for females.
Cost of Living Adjustments	3.50% for those hired before 11/1/1996 (Limited to 3.0% for those hired on or after 11/1/1996)

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULES OF EMPLOYER CONTRIBUTIONS (CONTINUED)
YEARS ENDED SEPTEMBER 30
(DOLLAR AMOUNTS IN THOUSANDS)**

Police and Fire Fighters' Retirement Fund

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially Determined Employer Contribution	\$ 91,284	\$ 105,596	\$ 145,631	\$ 136,115	\$ 103,430	\$ 110,766	\$ 96,314	\$ 116,700	\$ 127,200	\$ 132,300
Actual Employer Contributions	91,284	105,596	145,631	136,115	103,430	110,766	96,314	116,700	127,200	132,300
Annual Contribution Deficiency (Excess)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered Payroll	\$ 460,686	\$ 454,209	\$ 441,904	\$ 438,114	\$ 446,201	\$ 426,135	\$ 413,380	\$ 414,877	\$ 421,221	\$ 423,854
Actual Contributions as a Percentage of Covered Payroll	19.81%	23.25%	32.96%	31.07%	23.18%	25.99%	23.30%	28.13%	30.20%	31.21%

Notes to Schedule:

Valuation Date: For the fiscal years on and before FY 2019, actuarially determined contributions amounts are calculated as of the beginning of the fiscal year. Actual contributions are based on valuations as of October 1, two years prior to end of fiscal year in which contributions are reported. Actuarial valuations are performed every year. The assumptions shown below are from the currently approved assumptions and assumptions used to determine all contributions in the past would not have been the same.

Actuarial cost method	Entry age normal
Amortization method	Level dollar, closed
Remaining amortization period	Remaining amortization periods range from 12 to 20 years
Asset valuation method	5-year smoothed market
Inflation	3.50%
Salary increases	4.25% to 6.34%; includes wage inflation of 4.25%
Investment rate of return	6.50%, net of pension plan investment expense
Mortality	Pre-retirement and post-retirement mortality rates were based on the RPH 2014 Blue Collar Mortality Table projected generationally with Scale BB, set back 1 year for males. Post-disability mortality rates were based on the RPH-2014 Disabled Mortality Table set back 6 years for males and set forward 7 years for females.
Cost of Living Adjustments	3.50% for those hired before 11/1/1996 (Limited to 3.0% for those hired on or after 11/1/1996)

**DISTRICT OF COLUMBIA
 TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
 FIRE FIGHTERS' RETIREMENT FUND
 REQUIRED SUPPLEMENTARY INFORMATION
 SCHEDULE OF INVESTMENT RETURNS
 YEARS ENDED SEPTEMBER 30**

Annual Money-Weighted Rates of Return, based on a month-end net flow weighting method, as calculated by the custodian.

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Total Portfolio	3.840 %	5.340 %	12.970 %	9.346 %	(4.006)%	8.178 %

Note: The rates are shown net of fees. The rates in the prior-year financial statements were shown gross of fees for FY 2017 and 2018, and are restated in these financial statements. This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

SUPPLEMENTARY INFORMATION

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
SUPPLEMENTARY INFORMATION
SCHEDULES OF ADMINISTRATIVE EXPENSES
YEARS ENDED SEPTEMBER 30, 2019 AND 2018**

	2019	2018
Personal Services		
Salaries	\$ 6,057,962	\$ 6,419,916
Fringe Benefits	1,481,507	1,832,363
Total Personal Services	7,539,469	8,252,279
Nonpersonal Services		
Office Supplies	70,296	93,484
Telephone	45,611	96,286
Rent	1,967,723	1,823,864
Travel	183,023	193,704
Professional Fees	1,148,521	3,666,166
Postage	14,239	65,538
Printing	8,846	78,173
Insurance	116,875	148,879
Dues and Memberships	41,038	39,963
Audit Costs	290,680	191,450
Actuarial Fees	137,533	169,855
Legal Fees	322,963	531,913
Investment Fees	16,807,130	13,076,317
Contractual Services (STAR)	1,967,689	1,808,130
Equipment and Rental	59,474	198,734
Total Nonpersonal Services	23,181,641	22,182,456
Total Administrative Expenses	30,721,110	30,434,735
Investment Expenses	(17,800,245)	(14,390,879)
Net Administrative Expenses	\$ 12,920,865	\$ 16,043,856

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
SUPPLEMENTARY INFORMATION
SCHEDULES OF INVESTMENT EXPENSES
YEARS ENDED SEPTEMBER 30, 2019 AND 2018**

	2019	2018
Investment Managers*	\$ 15,766,206	\$ 12,417,567
Investment Administrative Expense	879,187	753,088
Investment Consultants	751,428	882,058
Investment Custodian	403,424	338,166
Total Investment Expenses	<u>\$ 17,800,245</u>	<u>\$ 14,390,879</u>

* Fees paid to traditional investment managers only; traditional investment managers are those that invest primarily in public equity and fixed income securities. A significant number of alternative investments are presented net of expenses. Management expenses are netted against investment income and because they are not readily separable from specific investment income as of the financial statement reporting date, amounts are recorded and reported net of management expenses and, therefore, are not included on this schedule.

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
SUPPLEMENTARY INFORMATION
SCHEDULES OF PAYMENTS TO CONSULTANTS
YEARS ENDED SEPTEMBER 30, 2019 AND 2018**

<u>Professional/Consultant</u>	<u>Nature of Service</u>	<u>FY 2019</u>	<u>FY 2018</u>
<u>Administrative Consultants</u>			
U.S. Treasury Office of D.C. Pensions	Benefit Payment Processing	1,967,689	1,792,130
Morgan, Lewis & Bockius	Legal Counsel	322,963	505,857
Software Information Resource Corp.	Information Technology Consulting	\$ 275,015	\$ 220,383
Softech & Associates, Inc.	Information Technology Consulting	142,000	190,000
Cavanaugh Macdonald Consulting	Actuarial Services	137,533	174,855
Office of Contract and Procurement	Procurement Services	136,971	-
Equinix, Inc.	Information Technology Consulting	109,311	132,954
Mobomo, LLC	Information Technology Consulting	72,382	386,124
CliftonLarsonAllen LLC	Financial Audit	68,000	57,200
Convergence, Inc.	Investment Consulting	60,000	60,000
DC Net	Information Technology Consulting	56,082	31,968
ODGroup, Inc. dba Orion Development Group	Professional Services	53,556	53,649
NGEN LLC	Audit Costs	44,750	134,250
International Foundation of Employee Benefits	CAPPP Training for Trustees	44,000	-
Capitol Document Solutions	Information Technology Consulting	40,980	38,961
DLT Solutions, Inc.	Information Technology Consulting	40,289	116,462
Advent Software, Inc.	Investment Consulting	39,552	42,337
Diligent Corp	Information Technology Consulting	31,575	31,575
XO Holdings	Information Technology Consulting	27,860	26,469
Election-America, Inc.	Trustee Elections	25,842	-
Kofax, Inc.	Information Technology Consulting	23,874	-
D.C. Office of the Chief Technology Officer	Information Technology Consulting	22,507	-
eVestment Alliance	Online Investment Service	20,689	20,087
TW Telecom	Information Technology Consulting	20,203	40,976
RSM US LLP formerly RSM McGladrey, Inc.	Financial System Consulting	19,314	22,468
SecureAuth Corporation	IT Software Maintenance	18,585	-
Networking for Future, Inc.	Information Technology Consulting	14,155	109,253
Harris, Mackessy & Brennan, Inc.	Information Technology Consulting	13,685	33,010
D.C. Department of Human Resources	Information Technology Consulting	11,882	-
The Newberry Group, Inc.	Information Technology Consulting	9,434	13,353
Incapsulate, LLC	IT Software Maintenance	8,725	-

**DISTRICT OF COLUMBIA
TEACHERS' RETIREMENT FUND AND POLICE OFFICERS AND
FIRE FIGHTERS' RETIREMENT FUND
SUPPLEMENTARY INFORMATION
SCHEDULES OF PAYMENTS TO CONSULTANTS (CONTINUED)
YEARS ENDED SEPTEMBER 30, 2019 AND 2018**

<u>Professional/Consultant</u>	<u>Nature of Service</u>	<u>FY 2019</u>	<u>FY 2018</u>
<u>Administrative Consultants (continued)</u>			
HBP, Inc.	Graphic Design for Publications	5,906	97,119
Phoenix Graphics, Inc.	Professional Services	3,550	7,200
Groom Law Group	Legal Counsel	5,390	6,306
Treyniqua Dickey	Professional Services	2,840	-
Oquendo Computer Services	Professional Services	2,825	2,175
Neal R. Gross & Co, Inc.	Professional Services	1,089	-
Corporate Investigations, Inc.	Professional Services	1,072	2,565
KMC, Inc.	Information Technology Consulting	-	232,107
Ectam, LLC	Information Technology Consulting	-	177,120
Mark Jackson	Information Technology Consulting	-	99,355
ASI Government, Inc.	Temporary Staffing Services	-	97,718
Yared Desta	Information Technology Consulting	-	83,711
Vonage Business formerly Icore Networks, Inc	Information Technology Consulting	-	67,135
Diamond Toles dba Dime Solutions, LLC	Professional Services	-	45,990
PRM Consulting, Inc.	Professional Services	-	40,000
American Arbitration Association	Arbitration Services	-	36,876
CenturyLink Formerly Level 3 Communications	Professional Services	-	33,041
CEM Benchmarking, Inc.	Investment Consultant	-	30,000
Taborda Solutions, Inc.	Professional Services	-	25,976
SHI International Corporation	Information Technology Consulting	-	22,995
Midtown Personnel Inc.	Benefits Consulting	-	21,760
Korn Ferry Hay Group, Inc.	Professional Services	-	7,262
Armstrong Teasdale	Legal Counsel	-	4,223
Emergent Systems Exchange, LLC	Professional Services	-	3,500
Total Administrative Consultants		3,902,075	5,378,455
<u>Investment Consulting</u>			
CEM Benchmarking	Investment consultant	-	30,000
Meketa Investment Group	Traditional investment consulting	620,000	620,000
Insightful Pension Consulting Group, LLC	Investment consultant	113,928	214,558
Abel Solutions	Traditional investment consulting	17,500	-
Zeno Consulting Group, LLC	Traditional investment consulting	-	17,500
Total Investment Consultants		751,428	882,058
Total Payments to Consultants		\$ 4,653,503	\$ 6,260,513